## APPENDIX A

## I. Agreed Terms

Term	Claim(s)	Agreed Construction	
wherein subset	'859 (15)	"wherein said subset comprises"	
comprises			
compression constraint	'556 (2, 6)	Plain and ordinary meaning	
circuit configured to	'877 (7, 8)	Plain and ordinary meaning (i.e., requires pre-	
		existing programming of hardware and	
		software to perform the cited functionality)	

## **II. Disputed Terms**

Term	Claim(s)	InterDigital's Construction and	Lenovo's Construction and Identification
		Identification of Intrinsic and Extrinsic	of Intrinsic and Extrinsic Evidence
		Evidence	
arithmetic decoding	'859 (10)	<b>Proposed construction</b> : The terms "stream"	The portion of this claim term following
method for symbols		and "current symbol" are limiting at least to	"comprising" is not part of the preamble
coded in the form of a		the extent that they provide antecedent basis	and therefore is limiting. Regardless, the
stream, comprising the		for those terms as they appear elsewhere in	entire term is limiting. The preamble is
following steps		the claim.	limiting.
applied at switching			
points distributed in		stream: stream of data.	To the extent construction is necessary,
said stream to decode			stream: "stream of data"
a current symbol		switching point: a point in the stream at the	
		level of which the probability model used to	<u>current symbol</u> : "a symbol that is currently
		code the current symbol can be modified.	being decoded"
		<u>current symbol</u> : a symbol that is currently	switching point: "a point in the stream at the
		being decoded.	level of which the probability model used to

Intrinsic evidence supporting InterDigital's construction: '859 Patent at 4:57-60, 9:56-59, 10:65-11:1; '859 Patent file history (IDG1373\_0000211-221)

Extrinsic evidence supporting
InterDigital's construction: Expert
testimony of Drs. Richardson and Xiong
regarding the understanding of one of skill in
the art including but not limited to the level of
ordinary skill in the art, understanding of the
claim term at issue, background, and context
surrounding the technology at issue. The
experts' testimony may discuss the relevant
specifications, file histories, and other
extrinsic evidence disclosed herein.

See also Appendix B.

code the current symbol can be modified—i.e., a probability model can be selected"

Intrinsic evidence supporting Lenovo's construction: '859 patent at 1:23-2:34, 9:46-54, 4:21-60, 5:8-46, 6:44-46, 8:55-57, 9:51-59, 10:21-23, 10:64-11:64, and associated Figures including 1, 2, 9, 10, and 11. Related patents and file histories including EP2449683.

Extrinsic evidence supporting Lenovo's construction: Expert testimony of Dr. Havlicek regarding the understanding of one of skill in the art including but not limited to the level of ordinary skill in the art, understanding of the claim term at issue, background, and context surrounding the technology at issue. The experts' testimony may discuss the relevant specifications, file histories, and other extrinsic evidence disclosed herein.

See also Appendix C.

means for decoding	'859 (15)	Proposed construction: Subject to § 112, ¶	Subject to § 112, ¶ 6.
from the stream, at	037 (13)	6.	Subject to § 112,    0.
switching points			Function: decoding a probability model
distributed in said		Function: decoding from the stream a	identifier for the current symbol from the
stream to decode a		probability model identifier	stream, at switching points distributed in the
current symbol, for			stream
said current symbol, a		Structure: an arithmetic decoder and	
probability model		equivalents thereof. See '859 Patent at FIG.	Structure: indefinite for lack of sufficient
identifier		13, 13:25-52.	corresponding structure.
		Alternatively, the structure is an arithmetic	Intrinsic evidence supporting Lenovo's
		decoder operable to perform the claimed	construction: '859 patent at 1:23-2:11,
		function, as described in the specification in	2:29-34, 9:46-54, 4:27-28, 4:56-60, 5:8-46,
		connection with step 202 and equivalents	10:1-17, 10:64-11:34, 11:55-64, 13:25-14:2,
		thereof, step 202 being described in the	and associated Figures including 1, 2, 9-11
		specification, for example at the following	and 13.
		figures and passages: '859 Patent at FIG. 13	
		and 13:25-52 and FIGS. 10, 11 and 10:1-14,	Extrinsic evidence supporting Lenovo's
		11:12-34.	<b>construction:</b> Expert testimony of Dr.
		Intrinsic evidence supporting InterDigital's	Havlicek regarding the understanding of
		construction: '859 Patent at 1:23-58, 2:17-	one of skill in the art including but not
		18, 4:33-5:7, 6:34-30, 10:1-13, 10:64-11:52,	limited to the level of ordinary skill in the
		13:32-35, 13:53-61; FIG. 4, 11, 13; '859	art, understanding of the claim term at issue,
		Patent file history (IDG1373_0000211-221)	background, and context surrounding the
		Tatent life initially (12/3/3_0000211 221)	technology at issue. The experts' testimony
		Extrinsic evidence supporting	may discuss the relevant specifications, file
		InterDigital's construction: Expert	histories, and other extrinsic evidence
		testimony of Drs. Richardson and Xiong	disclosed herein.
		regarding the understanding of one of skill in	
		the art including but not limited to the level of	See also Appendix C.
		ordinary skill in the art, understanding of the	
		claim term at issue, background, and context	

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		surrounding the technology at issue. The	
		experts' testimony may discuss the relevant	
		specifications, file histories, and other	
		extrinsic evidence disclosed herein.	
		See also Appendix B.	
means for selecting	'859 (15)	<b>Proposed construction</b> : Subject to § 112, ¶	Subject to § 112, ¶ 6
using said probability		6.	"
model identifier a			<u>Function</u> : using the probability model
probability model in a		<u>Function</u> : selecting a probability model	identifier to select a probability model in a
set comprising a		<u>- universe</u> , serecting u procuemty moder	set comprising a current probability model
current probability		Structure: an arithmetic decoder and	defined from symbols coded previous to the
model defined from		equivalents thereof. See '859 Patent at FIG.	current symbol and a subset of probability
symbols coded		13 and 13:25-52.	models wherein said subset comprises at
3		15 and 15.23-32.	
previous to the current		A1, 2, 1, 4, 4, 2, 2, 1,	least one probability model defined by
symbol and a subset of		Alternatively, the structure is an arithmetic	default
probability models		decoder operable to perform the claimed	
wherein subset		function, as described in the specification in	Structure: indefinite for lack of sufficient
comprises at least one		connection with step 204 and equivalents	corresponding structure
probability model		thereof, step 204 being described in the	
defined by default		specification, for example at the following	Intrinsic evidence supporting Lenovo's
		figures and passages: '859 Patent at FIG. 13	construction: '859 Patent at 1:23-2:11,
		and 13:25-52 and FIGS. 10, 11 and 5:36-43,	2:29-34, 4:27-28, 4:56-60, 5:8-46, 9:46-54,
		10:1-17, 11:12-36.	4:56-60, 10:1-17, 10:64-11:36, 11:55-64,
		,	
		<b>Intrinsic evidence supporting InterDigital's</b>	13:25-14:2, and associated Figures
		construction: '859 Patent at 2:17-18, 5:35-	including 1, 2, 9-11 and 13.
		43, 6:34-40, 8:4-7, 10:1-19; 11:12-36, 13:25-	
		52, FIGs.10, 11; '859 Patent file history	Extrinsic evidence supporting Lenovo's
		(IDG1373_0000211-221)	<b>construction:</b> Expert testimony of Dr.
		(1001373_0000211-221)	Havlicek regarding the understanding of
		Extringia avidance aumonting	one of skill in the art including but not
		Extrinsic evidence supporting	limited to the level of ordinary skill in the
		InterDigital's construction: Expert	art, understanding of the claim term at issue,
			art, understanding of the claim term at issue,

		testimony of Drs. Richardson and Xiong regarding the understanding of one of skill in the art including but not limited to the level of ordinary skill in the art, understanding of the claim term at issue, background, and context surrounding the technology at issue. The experts' testimony may discuss the relevant specifications, file histories, and other extrinsic evidence disclosed herein.	background, and context surrounding the technology at issue. The experts' testimony may discuss the relevant specifications, file histories, and other extrinsic evidence disclosed herein.  See also Appendix C.
C 11'	1050 (15)	See also Appendix B.	0.11 0.0110 5.6
means for adding in	'859 (15)	<b>Proposed construction</b> : Subject to § 112, ¶	Subject to § 112, ¶ 6
said subset said current probability		6.	Function: adding the current probability
model, the selected		Function: adding in said subset said current	model into the subset of probability models
probability model		probability model	model into the subset of probability models
becoming the current		producting model	Structure: indefinite for lack of sufficient
probability model		Structure: an arithmetic decoder and	corresponding structure.
		equivalents thereof. See '859 at FIG. 13 and	
		13:25-52.	Intrinsic evidence supporting Lenovo's
			construction: '859 Patent at 1:23-2:11,
		Alternatively, the structure is an arithmetic	2:29-34, 4:27-28, 4:56-60, 5:8-46, 8:8-37,
		decoder operable to perform the claimed	9:46-54, 10:1-17, 10:64-11:43, 11:55-64,
		function, as described in the specification in	13:25-14:2, and associated Figures
		connection with step 205 and equivalents	including 1, 2, 9-11 and 13.
		thereof, step 205 being described in the specification, for example at the following	
		figures and passages: '859 Patent at FIG. 13	Extrinsic evidence supporting Lenovo's
		and 13:25-52 and FIGS. 8, 10, 11 and 11:37-	<b>construction:</b> Expert testimony of Dr.
		43 (describing 205 and additionally that step	Havlicek regarding the understanding of
		205 can be identical to step 105), FIG. 7 and	one of skill in the art including but not
		8:8-37 (describing step 105).	limited to the level of ordinary skill in the
		, , ,	art, understanding of the claim term at issue,
			background, and context surrounding the

		Intrinsic evidence supporting InterDigital's construction: '859 Patent at 2:17-18, 4:21-54, 8:8-46, 11:7-54; 13:25-54; FIG. 11; '859 Patent file history (IDG1373_0000211-221)  Extrinsic evidence supporting InterDigital's construction: Expert testimony of Drs. Richardson and Xiong regarding the understanding of one of skill in the art including but not limited to the level of ordinary skill in the art, understanding of the claim term at issue, background, and context surrounding the technology at issue. The experts' testimony may discuss the relevant specifications, file histories, and other extrinsic evidence disclosed herein.	technology at issue. The experts' testimony may discuss the relevant specifications, file histories, and other extrinsic evidence disclosed herein.  See also Appendix C.
means for decoding	'859 (15)	See also Appendix B.  Proposed construction: Subject to § 112, ¶	Subject to § 112, ¶ 6
said current symbol with said current probability model	037 (13)	6.  Function: decoding said current symbol  Structure: an arithmetic decoder and equivalents thereof. <i>See</i> '859 Patent at FIG. 13 and 13:25-52.	Function: decoding the current symbol with the current probability model  Structure: indefinite for lack of sufficient corresponding structure.
		Alternatively, the structure is an arithmetic decoder operable to perform the claimed function, as described in the specification in connection with step 206 and equivalents thereof, step 206 being described in the specification, for example at the following	Intrinsic evidence supporting Lenovo's construction: '859 patent at 1:23-2:11, 2:29-34, 4:27-28, 4:56-60, 5:8-46, 8:8-37, 9:46-54, 10:1-9, 10:64-11:64,13:25-14:2, and associated Figures including 1, 2, 7-11, and 13.

figures and passages: '859 Patent at FIG. 13 and 13:25-52 and FIGS. 10, 11 and 10:18-19, 11:55-57.

Intrinsic evidence supporting InterDigital's construction: '859 Patent at 1:23-54, 2:17-18, 4:21-24, 4:33-54, 9:53-54, 10:18-19, 11:55-57, 13:25-52, FIG. 11, 13; '859 Patent file history (IDG1373\_0000211-221)

Extrinsic evidence supporting
InterDigital's construction: Expert
testimony of Drs. Richardson and Xiong
regarding the understanding of one of skill in
the art including but not limited to the level of
ordinary skill in the art, understanding of the
claim term at issue, background, and context
surrounding the technology at issue. The
experts' testimony may discuss the relevant
specifications, file histories, and other
extrinsic evidence disclosed herein.

See also Appendix B.

Extrinsic evidence supporting Lenovo's construction: Expert testimony of Dr. Havlicek regarding the understanding of one of skill in the art including but not limited to the level of ordinary skill in the art, understanding of the claim term at issue, background, and context surrounding the technology at issue. The experts' testimony may discuss the relevant specifications, file histories, and other extrinsic evidence disclosed herein.

See also Appendix C.

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means for updating	'859 (15)	<b>Proposed construction</b> : Subject to § 112, ¶ 6	Subject to § 112, ¶ 6
said current			
probability model		<u>Function</u> : updating said current probability	<u>Function</u> : updating the current probability
according to the		model	model according to the decoding of the
decoding of said			current symbol
current symbol		Structure: an arithmetic decoder and	
		equivalents thereof. See '859 Patent at FIG.	Structure: an algorithm wherein an
		13 and 13:25-52.	occurrence number for the current symbol is
			increased by 1
		Alternatively, the structure is an arithmetic	
		decoder operable to perform the claimed	Intrinsic evidence supporting Lenovo's
		function, as described in the specification in	construction: '859 Patent at 1:23-2:11,
		connection with step 208 and equivalents	2:29-34, 4:27-60, 5:8-46, 8:8-37, 9:46-54,
		thereof, step 208 being described in the	10:1-22, 10:64-11:64, 13:25-14:2, and
		specification, for example at the following	associated Figures including 1, 2, 7-11, and
		figures and passages: '859 Patent at FIG. 13	13.
		and 13:25-52 and FIGS. 10, 11, 4:33-54,	13.
		10:20-22, 11:57-61.	
		, , , , , , , , , , , , , , , , , , , ,	Extrinsic evidence supporting Lenovo's
		<b>Intrinsic evidence supporting InterDigital's</b>	<b>construction:</b> Expert testimony of Dr.
		<b>construction:</b> '859 Patent at 1:34-54, 2:17-	Havlicek regarding the understanding of
		18, 4:33-54, 5:45-46; 6:45-46; 8:56-57,	one of skill in the art including but not
		10:22-23, 11:57-59, 13:32-35, FIG. 10, 11;	limited to the level of ordinary skill in the
		'859 Patent file history (IDG1373_0000211-	art, understanding of the claim term at issue,
		221)	background, and context surrounding the
			technology at issue. The experts' testimony
		Extrinsic evidence supporting	may discuss the relevant specifications, file
		InterDigital's construction: Expert	histories, and other extrinsic evidence
		testimony of Drs. Richardson and Xiong	disclosed herein.
		regarding the understanding of one of skill in	
		the art including but not limited to the level of	See also Appendix C.
		ordinary skill in the art, understanding of the	11
		claim term at issue, background, and context	
		ciami term at issue, background, and context	

		surrounding the technology at issue. The experts' testimony may discuss the relevant specifications, file histories, and other extrinsic evidence disclosed herein.  See also Appendix B.	
sparse denoising filter	'556 (1, 5)	Proposed construction: Plain and ordinary meaning.  Intrinsic evidence supporting InterDigital's construction: '556 Patent cls. 4, 8; 1:12-17, 1:58-63, 2:4-62, 5:7-12,14:18-24, 9:23-28, 9:44-48, 10:8-23, 10:62-11:1, 11:16-19, 11:56-67, 13:21-65, 16:43-47, 17:11-18, 17:30-36; '556 Patent file history (IDG1373_00010395)  Extrinsic evidence supporting InterDigital's construction: Expert testimony of Drs. Richardson and Xiong regarding the understanding of one of skill in the art including but not limited to the level of ordinary skill in the art, understanding of the claim term at issue, background, and context surrounding the technology at issue. The experts' testimony may discuss the relevant specifications, file histories, and other extrinsic evidence disclosed herein.  See also Appendix B.	The portion of this claim term following "comprising" is not part of the preamble and therefore is limiting. Regardless, the entire term is limiting. The preamble is limiting.  To the extent construction is necessary, stream: "stream of data"  current symbol: "a symbol that is currently being decoded"  switching point: "a point in the stream at the level of which the probability model used to code the current symbol can be modified—i.e., a probability model can be selected"  Intrinsic evidence supporting Lenovo's construction: '556 patent at 2:8-10, 2:14-21, 13:24-25, 13:43-44, 11:17-24, and associated Figures including 1, 4, and 5. Patents and prosecution history for related patents including U.S. 9,277,243, U.S. 11,089,337, and PCT/US2007022795.

			Extrinsic evidence supporting Lenovo's construction: Expert testimony of Dr. Havlicek regarding the understanding of one of skill in the art including but not limited to the level of ordinary skill in the art, understanding of the claim term at issue, background, and context surrounding the technology at issue. The experts' testimony may discuss the relevant specifications, file histories, and other extrinsic evidence disclosed herein.  See also Appendix C.
adaptive sparse de-	'556 (1, 5)	<b>Proposed construction</b> : Plain and ordinary	"sparse de-noising filter for performing a
noising filter	330 (1, 3)	meaning.	second pass to reduce noise, which is not a deringing filter, that can adjust its own
		Intrinsic evidence supporting InterDigital's	parameters automatically"
		<b>construction:</b> '556 Patent at 2:10-14, 10:57-	
		59, 16:25-42, 16:65-17:4, 17:5-10; '556	Alternatively, "a filter which exploits a
		Patent file history (IDG1373_00010395)	sparse image model using an over complete set of linear transforms and hard thresh-
		Extrinsic evidence supporting	holding, which is not a deringing filter, that
		InterDigital's construction: Expert testimony of Drs. Richardson and Xiong	can adjust its own parameters automatically."
		regarding the understanding of one of skill in the art including but not limited to the level of ordinary skill in the art, understanding of the claim term at issue, background, and context surrounding the technology at issue. The experts' testimony may discuss the relevant specifications, file histories, and other extrinsic evidence disclosed herein.	Intrinsic evidence supporting Lenovo's construction: '556 patent at 2:10-14, 2:4-9, 13:53-56, 11:64-66, 12:1-42, and associated Figures including 1, 4, and 5. Patents and prosecution history for related patents including U.S. 9,277,243, U.S. 11,089,337, and PCT/US2007022795.

See also Appendix B.	
	Extrinsic evidence supporting Lenovo's construction: Expert testimony of Dr. Havlicek regarding the understanding of one of skill in the art including but not limited to the level of ordinary skill in the art, understanding of the claim term at issue, background, and context surrounding the technology at issue. The experts' testimony may discuss the relevant specifications, file histories, and other extrinsic evidence disclosed herein.
	See also Appendix C.